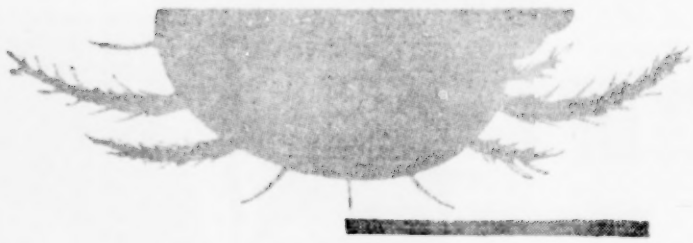

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SW. G. 4

The Development of Tea Cultivation in the U.S.S.R.

By M. LORDKIPANIDZE

History

Georgia, now the main tea growing district of the USSR, received her first tea plants at the beginning of the 19th century. They were imported from China and first planted in the Ozurgeti District, where the plants took root well. Soon after that tea was planted on the estates of Prince Dadiani, the ruler of Megrelia (near Zugdidi) and Prince Eristavi, the ruler of Guria (near Chokhatauri). But it was only in 1862-1864 that the first specimens of Georgian tea were obtained. After that many peasants began cultivating it on their farms.

In 1893 15 hectares (1 hectare is equal to 2.5 acres) were planted to tea in Georgia. Later on tea plantations were expanded to 115 hectares and a small factory was built for the treatment of tea leaf. But, though both soil and climate were suitable for tea cultivation in Georgia, it was not grown on a large scale before the revolution. In 1913 tea production was some 140 tons per year, while Tsarist Russia imported up to 50,000 tons of it every year.

As the revenues from import duties on tea were big, the Tsarist government was not interested in developing its cultivation in the country. Tea traders also impeded the development of tea growing in the country as the sale of imported tea brought in enormous profits.

A Period of Rapid Development

Under the Soviet regime tea cultivation was organized on a big scale in collective farms and specialized state farms. In 1928 tea plantations occupied about 3,000 hectares in Georgia, in 1940—22,573, in 1950—40,261 and 1960 some 53,000 hectares.

Improved agrotechnique, the broad use of scientific achievements and the mechanization of labour helped to raise the yield of tea leaf. In 1933 the average yield of high grade tea leaf for the whole of Georgia was below 900 kg. per hectare, in 1940—2,292 kg., in 1958—2,925 kg., and in 1960 it was over 3,200 kg. For tea yields Georgia is ahead of many tea growing countries and it must be noted that in the climate of that republic plant growth and leaf picking lasts five months only (May to September) instead of the whole year round.

By applying a set of agrotechnical measures the best collective and state farms get still bigger crop yields. The Ochkhamuzi tea-growing state farm, for example, had in 1960 an average harvest of 6,600 kg. of tea leaf per hectare. The team led by collective farmer Tatyana Chkhaidze of Shroma village picked 10,100 kg. of high grade tea leaf per hectare of plantation. Many similar examples could be quoted.

The expansion of the planted area and rise of crop yields led to a rapid increase of the gross harvest of high grade tea leaf. In 1921 the harvest of tea leaf amounted to 550 tons, in 1940 to 51,741 tons, in 1958 to 132,000 tons. The harvest of 1960 is still bigger. Georgia supplies 97 per cent of the tea produced in USSR.

Selected Varieties

Seedlings and seeds for mass planting were imported to Georgia from China, Japan, India and other countries. There were several varieties of tea, some yielding good quality leaf, were badly adapted to local conditions, others were well adapted to the local climate but yielded coarse leaf. In view of this, Soviet plant breeders had to develop new varieties.

Selected tea varieties were bred for the first time in the world on the Black Sea shore, in the Chakva branch of the USSR Research Institute of Tea and Subtropical Cultures. They were developed by Academician Kseniya Bakhtadza.

Tea breeding consists in applying a set of measures including both selection and plant crossing. The best yielding and most resistant Chinese tea plants were the main material used in selection. Indian tea, which had kept its high qualities under Georgian conditions, was used for crossing.

Two new varieties of tea: Gruzinsky No. 1 and Gruzinsky No. 2 (more resistant to cold), exceeding in their quality the previously cultivated varieties, were bred in 1941. Years of test have given excellent results: the crop yields of both varieties are 30 to 35 per cent higher than those of non-selected tea. The young shoots of the new varieties contain more tannin and extractive substances. The shoots are big and heavy. The data on hand show that all the shoots of selected tea plants weigh 0.6 gr. and those of non-selected varieties 0.49 gr. One kg. of selected tea contains about 1,600 shoots, while non-selected

varieties have over 2,000 shoots—big shoots, and it is much easier to pick big shoots.

The new varieties yield an average of 6-7 tons of high grade tea leaf per hectare, as against 4.5-4.8 tons obtained from non-selected tea. Moreover, the first harvest is picked from plants that are 3 years old, while in the case of non-selected tea it is picked when the plants are 4 years old.

Several new varieties of Georgian tea were developed in 1951. Six of these, Gruzinsky Nos. 4, 5, 6, 8, 11 and 12 have been approved by the State Commission of the USSR Ministry of Agriculture for testing Agricultural Plant Varieties. Nos. 4 and 8 can be grown in new districts, farther North. The content of tannin in the leaves of Gruzinsky No. 5 is 28-29 per cent and of extractive substances, 48.4-48.7 per cent, which is much more than in the leaves of other varieties.

As a result of work done by Soviet scientists, tea can be grown in Azerbaijan and in Krasnodar Territory. In Azerbaijan, tea plantations cover 6,000 hectares and in Krasnodar Territory 4,000 hectares.

Agrotechnique and Mechanization

In the spring season (January-March) the interrows of Georgian tea plantations are cultivated to a depth of about 15? and phosphoric and potash fertilizers are placed at the same time. Coarse leaf is picked in February-March and nitric fertilizers are set in: ammonium sulphate or ammonium nitrate.

From the middle of February the bushes are trimmed to give them a semi-oval form and help the formation of a greater number of young shoots. The trimmings are used as raw material for making caffeine (Georgia has a big caffeine factory). In March and April the bushes are fumigated with cianide solution as a protection against mealy bugs. The plantations are cultivated and hoed four times during the summer and phosphoric and potash fertilizers are placed at the same time.

Given the present standard of mechanization it takes from 315 to 410 man-days to cultivate one hectare of plantation (depending on the relief of the ground).

A special Georgian Designing Bureau for tea and mountain agriculture, opened in Tbilisi in 1949, has designed several automative chassis and tea plantation machines. They are used in bush trimming, winter and summer cultivation of interrows and soil, fertilizer placing and bush fumigation.

The efforts of Georgian designers are now centered on making improvements in the tea picking machines and designing new ones.

Tea Factories

Sixty-four big tea factories have been built in Georgia under the Soviet regime. They are all equipped with Soviet made machinery. Fifteen new factories will be built in the course of the seven-year period.

The output of ready tea is rising every year. The 1940 output amounted to 11,000 tons of black and green tea, in 1958 the output had risen to 32,500 tons and in 1959 it reached some 38,000 tons. Under the provisions of the seven-year plan the output in 1965 will be 50,000 tons.

Highly productive machines have been broadly used in tea factories in recent years. Engineer Sh. Mardaleishvili's many-tiered fermenting machine raises the quality of tea by 0.15-0.25 points, reduces the expenditure of electric current by more than 50 per cent and greatly improves the working conditions. It also diminishes the time of tea leaf fermentation by 3 or 4 hours, thus saving 100 million roubles for the tea industry.

The workers of the Research Institute of the Tea Industry have designed a fixation machine combining two technological processes: steaming and drying, and at the same time greatly improving the working conditions for the factory personnel. In the Lanchkhuti tea factory, production of green tea is fully mechanized by means of this machine and a perpetual motion roller. All the processes here are done by machines.

The heating and twisting unit designed by L. Barbakadze and M. Bokuchava is very effective. Under this method the fermentation process is replaced by thermal treatment, which reduces the production cycle from 15-20 days to 10-12 hours. A device for establishing the humidity of green tea leaf, an improved drier for caffeine raw material and other devices have also been designed.

Under the Seven-Year Plan

The tea industry occupies an important place in Georgian economy. It has become a profitable item of the republic's budget.

Expenditure on tea production is steadily falling. For example, the amount of raw material used for producing one ton of tea is 40 kg. less than in 1950, which means a great economy. A large sum (over 125 million roubles) is saved in comparison with 1950 by increasing the proportion of highest quality and first quality of black tea.

The target figures of the 7-year plan have been drawn up with a view to the great demand for tea in the USSR. One hundred and seventy thousand tons of high grade tea leaf must be stocked in 1965. Tea plantations will cover 70,000 hectares, that means that about 18,000 hectares of new tea plantations are to be planted. Georgian tea-growers intend to exceed the plan and produce 200,000 tons of high grade tea leaf.

Under the 7-year plan the state will invest 400 million roubles in Georgia's tea industry. Out of that sum 224 million will be spent on factory building, over 100 million on house building and at least 80 million on new equipment for the enterprises.

Land improvement work is to be conducted on 35,000 hectares of tea plantations in the course of this seven-year period, including draining on 25,000 hectares and irrigation on 10,000 hectares.

The construction of new factories which will produce organic fertilizers for the tea plantations is planned for the nearest future.